IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

	Kevin D. JORCZAK et al.	Examiner:	Steven O. DOUGLAS
Serial No.:	10/714,467	Group Art Unit:	3771
Filing Date:	November 14, 2003	Confirmation No:	2499

Title: REMOTE CONTROL GAS REGULATION SYSTEM

CONSIDERED: /SD/
10/30/08

DECLARATION OF RICHARD F. VAZ

I, Richard F. Vaz, declare as follows:

1. I am Associate Professor of Electrical and Computer Engineering and Dean of the Interdisciplinary and Global Studies Division at the Worcester Polytechnic Institute in Worcester, Massachusetts. I earned my Ph.D. at the Worcester Polytechnic Institute in 1987. My principal expertise has been in the fields of machine vision, signal processing, communications, internationalization of technological education, technology/society studies, and global project-based education. Awards I have earned include the WPI Trustees Awards for Outstanding Teaching (1993) and Outstanding Academic Advising (1999), the Eta Kappa Nu Award for Outstanding Contributions to the ECE Department (2000), and WPI's Outstanding ECE Professor Award (five times between 1990 and 2006). I have been a Senior Science Fellow of the Association of American Colleges & Universities since 2004.

2. I have reviewed U.S. Patent Application No. 10/714,467, published as U.S. Published Patent Application No. 20050103342. The application describes an invention for which I supervised the construction of a prototype as a class project for academic credit.

3. The project was carried out during the fall 2001 and spring 2002 semesters by Kevin Jorczak, Matthew Kling, and Daniel Nelson, who were then full-time students at the Worcester Polytechnic Institute majoring in electrical and computer engineering. They had the assistance of Dr. Leonard Polizzotto and Dr. David S. Green for discussions and consultations. Messrs. Jorczak, Kling, and Nelson completed the project as part of a normal course load.

4. The project was carried out with considerable use of purchased components. For example, the mechanical components to achieve control of gas flow were bought off the shelf. An electronic remote control and hardware to control the valve and flowmeter was, however, developed. The remote control had to be laid out on a printed circuit board and provided with packaging including buttons, a dial, microprocessor wireless transceiver and power supplies. A printed circuit board was also developed to control the flow meter and valve which included power supplies, microcontroller, valve, flow meter and wireless transceiver. Both printed circuit boards had to be provided with software to implement their control functions.

5. In addition, all software running on the microcontrollers was written with assembly code. The assembly code was compiled and debugged with free software provided by the microcontroller manufacturer. The printed circuit boards were designed with free software from a widely used online printed circuit board manufacturer.

6. The class project tested the prototype for functionality. However, the class project did not perform any clinical testing. Conformance to Food and Drug Administration safety requirements was not tested as part of the class project. The testing was carried out with compressed air in place of oxygen. For oxygen use, oxygen-compatible devices are required.

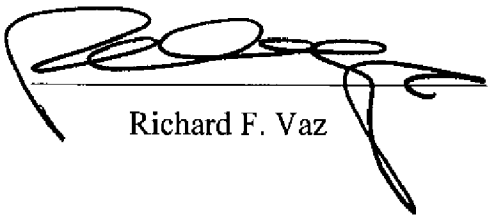
7. In my opinion, the disclosure of U.S. Patent Application No. 10/714,467 was fully adequate to guide a person of skill in the art to implement the invention described there. Such a person would generally have more training and/or experience than the then-students, Messrs. Jorczak, Kling, and Nelson.

8. In implementing the invention described in U.S. Patent Application No. 10/714,467, a person of skill in the art would be able to take advantage of the variety of components which are available commercially. Such a person would also be able to use the tools for designing and laying out circuit boards and for programming embedded systems which are available commercially and in widespread use. To the extent further guidance was needed, there would be a considerable literature on embedded systems, control systems, gas flow control, and other relevant subjects which could be consulted. That literature would include, for example, the patents cited in the application itself.

9. I have no financial interest in the application nor in the company which owns it, Remcore, Inc.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 10/1/2008



Richard F. Vaz